

GENERALIA INSECTORUM

DIRIGÉS PAR

P. WYTSMAN

ORTHOPTERA

FAM. LOCUSTIDÆ

SUBFAM. MECONEMINÆ, PHYLLOPHORINÆ,

TYMPANOPHORINÆ, PHASGONURINÆ,

PHASMODINÆ, BRADYPORINÆ

by A. N. CAUDELL

WITH 2 COLOURED PLATES

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SUBFAM. MECONEMINÆ



HE Subfamily Meconeminæ comprises small light green insects, essentially arboreal in their habits. They occur in Europe, Asia and Africa and represent less than a dozen described genera. The European forms, belonging to the genera *Meconema* and *Cyrtaspis*, have been treated of quite recently by Dr. Burr 1). The general characteristics of the group are as follows :

Antennæ inserted between the eyes. Prosternum unarmed. Tarsi depressed, four-jointed, the first and second segments longitudinally silcate laterally; fore tibiæ unarmed apically above, the foramina typically open; posterior tibiæ with an apical spine above on each side. Organs of flight variously developed, some forms being apterous, others fully winged and still others with the wings and elytra more or less abortive; the tympanii, even in fully winged forms, is rarely well developed as is usual in the Locustidæ.

The genera comprising this small subfamily may be separated by the following table :

TABLE OF GENERA OF MECONEMINÆ

1. <i>Elytra much abbreviated and concealed by the pronotum or wanting; wings wanting</i>	2.
— <i>Elytra fully developed, or abbreviated; wings present.</i>	3.

1) *Entomological Record*, Vol. 18, p. 256 (1906).

2. Subgenital plate of the male without styles, elongate, incurved and apically tridentate; African	8. Genus ACILACRIS, Bolivar.
— Subgenital plate not as above, with long styles; European	6. Genus CYRTASPIS, Fischer.
3. Pronotum posteriorly produced, rounded posteriorly, covering the base of the elytra	4.
— Pronotum posteriorly truncate or rounded, less produced, the elytra free	6.
4. Elytra longer, usually two or more times as long as the pronotum	5.
— Elytra shorter than, or barely longer than, the pronotum	2. Genus THAUMASPIS, Bolivar.
5. Elytra three or more times as long as the pronotum	7. Genus AMYTIA, Karsch.
— Elytra not over twice as long as the pronotum	4. Genus NICEPHORA, Bolivar.
6. Ovipositor smooth; pronotum without distinct humeral sinus. — Plate I, Fig. 11	5. Genus MECONEMA, Serville.
— Ovipositor towards apex with strongly serrate margins; pronotum with distinct humeral sinus	1. Genus XIPHIDIOLA, Bolivar.
UNPLACED. Based upon a male nymph	3. Genus OROPHILA, Krauss.

I. GENUS XIPHIDIOLA, BOLIVAR

Xiphidiola. Bolivar, Mem. Soc. Espan. Hist. Nat., Vol. 1, p. 364 (1906).

Characters. (From original of Bolivar.) — « Statura parva. Fastigium verticis in tuberculum subacuminatum apice obtuse productum. Frons brevis, transversa, rotundata. Antennæ longissimæ, annulis fuscis parum distinctis ornatae margines interni scrobum antennarum parum elevati. Oculi globosi prominuli. Pronotum subcylindricum disco postici producto sinu humerali distincto. Elytra apicem femorum longe superantia angustissima apice angusto rotundata, margine postico recto, vena mediastina explicata, venis radialibus, basi apicque distantibus ante medium sub contiguis, ramo radiali postico ramulos 4-5 versus marginem posticum emittente. Alæ elytrorum longitudine. Coxæ anticæ spinæ armatae. Tibiæ anticæ utrinque foramine aperta instructæ, supra inermes, subtus spinis intus 4 extus 5 longiusculis armatae. Tibiæ intermediae fere totæ incrassatae, subtus extus spinis 6 intus 5 armatae. Tibiæ posticæ superne multispinosæ in utroque latere 28-30, subtus tantum pone medium spinis rarissimis instructæ. Ovipositor incurvus marginibus apice valde serrato-denticulatis. »

Type. — *Xiphidiola nigrospinosa*, Bolivar.

Geographical distribution of species. — Spanish Guinea.

1. *X. concolor*, Bolivar, Mem. Soc. Espan. Hist. Nat. Vol. 1, p. 365 (1906). Spanish Guinea.
2. *X. nigrospinosa*, Bolivar, ibidem, p. 365 (1906). Spanish Guinea.

2. GENUS THAUMASPIS, BOLIVAR

Thaumaspis. Bolivar, Ann. Soc. Ent. Fr. Vol. 68, p. 768 (1900); Kirby, Syn. Cat. Orth. Vol. 2, p. 373 (1906).

Characters. (Original, after the autor.) — « Statura parva. Colore pallide-viridi. Fastigium verticis in tuberculum obtusum productum. Frons brevis, transversa. Antennæ longissimæ, fragiles. Margines interni scrobum antennarum valde elevati. Oculi globosi, prominuli. Pronotum scutatum, antice truncatum vel subsinuatum, postice rotundato-productum, absque sinui humerali. Elytra abbre-

viata, venis parum explicatis, raro in ♂ tympano instructa. Alæ nullæ vel abortivæ. Coxæ anticæ spina armatæ. Femora omnia subitus inermia, sulcata. Tibiæ anticæ tympano aperto instructæ, supra teretes, inermes, lateribus haud sulcatæ, subitus, extus intusque 4-spinosæ. Tarsi breves, articulis binis prioribus latere sulcatis. Prosternum muticum. Mesosternum transversum, haud bituberculatum. Cerci ♂ curvati, appendiculati. Lamina subgenitalis ♂ postice late truncata, stylis brevibus. Ovipositor subrectus, marginibus integris, acuminatus. »

Type. — *Thaumapsis trigonurus*, Bolivar.

Geographical distribution of species. — India.

1. *T. forcipatus*, Bolivar, Ann. Soc. Ent. Fr. Vol. 68, p. 769, pl. 11, f. 12a-b S. India. (1900).
2. *T. longipes*, Bolivar, ibidem, p. 769, 770 (1900). Madura.
3. *T. trigonurus*, Bolivar, ibidem, p. 769, pl. 11, f. 11a-b (1900). — (Plate 2, S. India. Fig. 7).

3. GENUS OROPHILA, KRAUSS

Orophila. Krauss, Zool. Anz. Vol. 15, p. 168 (1892); Kirby, Syn. Cat. Orth. Vol. 2, p. 374 (1906).

Characters. (From ♂ nymph, after the author.) — « Frons valde declivis, fere horizontalis, fastigium verticis horizontaliter productum, angustum, sulcatum, cum fastigio frontis contiguum. Margines interni scrobum antennarum elevati, fastigio frontis latius sejuncti, fastigio verticis breviores. Antennæ corpore duplo longiores, articulo basali magno, subcylindrico, inermi. Oculi globosi. Pronotum antice posticeque productum, rotundatum, selliforme, postice fornicatum et carina laterali instructum, sulcis transversis nullis, lobi laterales angusti, margine inferiore subrotundato, Elytra valde abbreviata, pronoto fere obtecta. Alae deficientes. Prosternum inerme, meso- et metasternum transversa, antice et postice truncata, transverse sulcata, utrinque foveolata, metasterni foveis carinula mediana sejunctis. Coxæ anticæ spina armatæ. Femora inermia, anteriora lobis genicularibus obtusis, postica lobis acuminatis. Tibiæ anteriores supra rotundato-carinatae, spinis apicalibus nullis, lateraliter sulcatæ, anticæ supra spinis duabus, intermediae spinis tribus armatæ, anticæ infra inermes, intermediae spina unica instructæ tibiæ posticæ supra utrinque in tota longitudine spinis inæqualibus munitæ, supra infraque spina apicali in utroque margine. Tarsorum articuli lateraliter sulcati. Abdomen supra rugulis longitudinalibus in seriebus (una mediana, duo laterales) dispositis insigne. Segmentum anale ♂ transversum, postice rotundatum, sulcis tribus longitudinalibus instructum. Cerci ♂ breviusculi, teretes, obtusi, intus sub apicem brevissime mucronati. Lamina subgenitalis ♂ elongata. postice excisa, stylis brevibus instructa. ♀ ignota. »

Type. — *Orophila nubigena*, Krauss.

Geographical distribution of species. — Teneriff.

1. *O. nubigena*, Krauss, Zool. Anz. Vol. 15, p. 169 (1892). Teneriff.

4. GENUS NICEPHORA, BOLIVAR

Nicephora, Bolivar, Ann. Soc. Ent. Fr. Vol. 68, p. 770 (1900); Kirby, Syn. Cat. Orth. Vol. 2, p. 374 (1906).

Characters. (From the original of the author.) — « Statura parva. Colore pallide viridi. Fastigium verticis in tuberculum obtusum productum. Frons brevis, transversa. Antennæ longissimæ,

fragiles, punctis nodulosis fuscis signatae. Margines interni scrobum antennarum elevati. Oculi globosi, prominuli. Pronotum sulcatum, antice rotundato-truncatum, postice rotundato-productum; sinu humerali nullo. Elytra abdomine parum breviora, venis valde elevatis, tympano sublaevi, sub pronoto abscondito, instructa. Alae valde abbreviatae. Coxae anticæ spina armatae. Femora omnia subtus sulcata, inermia. Tibiae anticæ utrinque tympano aperto, supra teretes, subtus, intus extusque 4-spinosæ, spinis apicalibus ægre distinguendis. Tarsi breves, articulis binis prioribus latere sulcatis. Prosternum muticum. Mesosternum transversum, læve. Lamina subgenitalis postice valde attenuata, excisa; stylis breves. Ovipositor falcatus, sensim acuminatus. Cerci ♂ magni, apice acute spinosi, intus basi processibus instructi quorum internus apice ampliatus et denticulatus. »

Type. — *Nicephora trigonidoides*, Bolivar.

Geographical distribution of species. — India.

1. *N. mazerani*, Bolivar, Ann. Soc. Ent. Fr. Vol. 68, p. 771, 773, pl. 11, Madura. f. 16, (1900).
2. *N. mirabilis*, Bolivar, ibidem, p. 771, 773 (1900) Madura.
3. *N. subulata*, Bolivar, ibidem, p. 771, 772, pl. 11, f. 16, 16a (1900). — S. India.
4. *N. trigonidoides*, Bolivar, ibidem, p. 1771, pl. 11, f. 14 (1900). — **Plate 2**, S. India. Fig. 6.

5. GENUS MECONEMA, SERVILLE

Meconema. Serville, Ann. Sc. Nat. Vol. 22, p. 157 (1831); Kirby, Syn. Cat. Orth. Vol. 2, p. 370 (1906).

Characters. — Anterior tibiae with the foramina open. Pronotum but little produced posteriorly, the hind border rounded; humeral sinus absent or but little developed. Organs of flight present, the elytra usually completely developed, always projecting well beyond the pronotal disk. Ovipositor smooth, approximately as long as the posterior femora.

Type. — *Locusta varia*, Fabricius.

Geographical distribution of species. — Europe, Japan.

1. *M. meridionale*, Costa, Faun. Nap. Orth. Loc. p. 14, pl. 10, f. 2, 3 (1860) France, Italy, Spain. (*Meconema*); Kirby, Syn. Cat. Orth. Vol. 2, p. 371 (1906). — **Plate 2**, Fig. 5.
2. *M. subpunctatum*, Motschulsky, Bull. Soc. Nat. Moscou (1), Vol. 29, p. 181 Japan. (1866); Kirby, Syn. Cat. Orth. Vol. 2, p. 371 (1906).
3. *M. thalassina*, De Geer, Mem. Ins. Vol. 3, p. 433 (1771) (*Locusta*); Europe. Borek, Skand. Ratv. Ins. p. 62 (1900) (*Meconema*); Kirby, Syn. Cat. Orth. Vol. 2, p. 371 (1906). — **Plate 1**, Fig. 11. 2
- varia*, Fabricius, Ent. p. 287 (1775) (*Locusta*).
- arboreus*, Fuessley, Verz. Schweiz. Ins. p. 23 (1775) (*Gryllus*).
- viridissimus minor*, Sulzer, Gesch. Ins. p. 83, pl. 8, f. 9 (1776) (*Gryllus Tettigonia*).
- falcatus*, Schrank, Enum. Ins. Austral. p. 245 (1781) (*Gryllus*).
- nana*, Stoll, Spectres Saut. p. 28, pl. 13a, f. 55 (1813) (*Gryllus Tettigonia*).

6. GENUS CYRTASPIS, FISCHER VON WALDHEIM

Cyrtaspis. Fischer von Waldheim, Orth. Europ. p. 235 (1853); Kirby, Syn. Cat. Orth. Vol. 2, p. 372 (1906).

Characters. (From the original of the author.) — « Corpus parvum, subcylindricum, supra convexum. Caput exertum, vertice globose, ejus tuberculo superiore acutiusculo, producto; antennæ intra oculos insertæ, brevitor pilosæ, articulo primo magno, depresso, tuberculi apicem longe superante, pliculâ utrinque suffulto, secundo minore, subcylindrico, ceteris parvis; longitudo antennarum dubia (in specimenibus examinatis multilatæ erant); oculi parvi, valde globosi; facies declivis, infra angusta; palpi graciles, breviter pilosi, maxillares articulis tribus ultimis elongatis, 4. tertio breviore, 5. tertio longiore, apice crassiore, truncato; labiales articulo ultimo subsecuriforme, cylindricum, oblongo-ovatum, fere abdominis longitudine, antice et postice productum (in ♀ magis truncatus), ad latera profunde descendens, quasi circa prothoracis dorsum semiconvolutum, ubique nisi pone occiput tenuiter marginatum. Partes sternales transversæ, angustæ, muticæ. Elytra ♂ squamæ formia, parum convexa, subincumbentia, profunde sub pronoto abscondita, ♀ ? nulla. Alæ nullæ. Pedes breviusculi, parce pubescente; coxae anticæ supra spinâ armatæ; tibiæ anticæ tympano aperto, antice muticæ, postice apinâ unicâ, intermediæ muticæ; femora omnia mutica, postica fere corporis longitudine, basi subin-crassata, tibiæ posticæ antice muticæ, postice spinis non confertis, apicalibus brevissimis; tarsorum omnium articulus penultimus cordatus. Abdomen breve; cerci ♂ elongati, lamina subgenitalis ♂ stylis instructa; ovipositor ♀ (in specie unicâ hucusque cognitâ) falcatus, denticulatus. »

Type. — *Barbitistes scutatus*, Charpentier.

Geographical distribution of species. — Europe.

1. <i>C. lineolata</i> , Costa, Faun. Nap. Orth. Loc. p. 19, pl. 14, f. 4 (1860).	S. Italy.
2. <i>C. scutata</i> , Charpentier, Hor. Ent. p. 192 (1829) (<i>Barbitistes</i>); Fischer von Waldheim, Orth. Eur. p. 235, pl. 11, f. 11ae (<i>Cyrtaspis</i>).	Portugal.
3. <i>C. variopicta</i> , Costa, Faun. Nap. Orth. Loc. p. 17, pl. 10, f. 2 (1860); Kirby, Syn. Cat. Orth. Vol. 2, p. 372 (1906); Bur. Ent. Soc. Vol. 18, p. 256 (1906). — Plate 2, Fig. 9.	Italy, Dalmatia, Triest.

7. GENUS AMYTTA, KARSCH

Amytta. Karsch, Wien. Ent. Zeit. Vol. 7, p. 160 (1888); Kirby, Syn. Cat. Orth. Vol. 2, p. 373 (1906).

Anepitacta. Brunner, Verh. zool.-bot. Ges. Wien. Vol. 41, p. 22, 178 (1891); Kirby, Syn. Cat. Orth. Vol. 2, p. 373 (1906); Brunner, Rev. Orth., p. 170 (1893); Griffini, Ann. Mus. civ. Stor. Nat. Genova. Vol. 42, p. 367 (1906).

Characters (After the original of the author.) — « Statura parva, colore pallide viridi. Fastigium verticis in tuberculum obtusum productorum. Frons brevis rotundata. Antennæ longissimæ, fragiles, annulis, nonnullis nodulosis, fuscis, valde distantibus signatae. Margines interni scrobum antennarum valde elevati. Oculi globosi, valde prominuli. — Pronotum subcylindricum, elongatum, disco postice producto, lobato, sinu humerali distincto. Elytra perfecte explicata, angusta, elongata, marginé antico recto, apice rotundato, margine postico toto recto, vena mediastina distincta, venis radialibus bibis, interstitio sat lato, divisis, basi tumescentibus, tympano in ♂ instructa. Alæ magnæ, elongatae, elytrorum longitudine, totæ, hyalinæ. Coxæ anticæ spina armatæ. Femora gracilia. Tibiæ anticæ utrinque foramine aperto instructæ, supra totæ inermes, subtus utrinque spinis (6) validis longis armatae. Tarsi breves articulo saltem secundo lateribus evidenter sulcato. Piosternum muticum. Lamina supraanalís ♂ transversa, valde convexa, margine postico late emarginata. Cerci ♂ breves, validi, depresso, pone medium subito incurvi, dilatati, profunde fissi, apicibus obtusis. Lamina subgenitalis ♂ elongata, basi lata et utrinque appendice curvato acutissimo instructa, tunc angustata et stylis duobus

longes articulato insertis munita. Ovipositor abdominis longitudine, integerrimus, sensim acuminatus, fere rectus, apice incurvatus. »

Type. — *Amytta pellucida* Karsch.

Geographical distribution of species. — Africa, Japan.

1. *A. albicorne*, Motschulsky, Bull. Soc. Nat. Moscou (1). Vol. 29, Japan. p. 181 (1866) (*Meconema*); Kirby, Syn. Cat. Orth. Vol. 2, p. 371 (1906); Matsumura & Shiraki, Journ. Coll. Agric. Sapporo. Vol. 2, p. 26 (1908) (*Amytta*).
2. *A. aliquantula*, Karsch, Berl. Ent. Zeitschr. Vol. 38, p. 133 (1893) Adeli. (*Anepictata*); Kirby, Syn. Cat. Orth. Vol. 2, p. 373 (1906).
3. *A. contaminata*, Karsch, ibidem, p. 132 (1893) (*Anepictata*); Kirby, Adeli. ibidem, p. 373 (1906).
4. *A. egestosa*, Karsch, ibidem, p. 133 (1893) (*Anepictata*); Kirby, ibidem, Adeli. p. 373 (1906).
5. *A. inconspicua*, Brunner von Wattenwyl, Verh. Zool.-bot. Ges. Wien, Cameroons. Vol. 41, p. 178, pl. 2, f. 34a-b (1891) (*Anepictata*); Kirby, Syn. Cat. Orth. Vol. 2, p. 373 (1906); Griffini, Ann. Mus. Genova, Vol. 42, p. 367 (1906) (*Amytta*). — **Plate 2, Fig. 8.**
6. *A. mutillata*, Karsch, Ent. Nachr. Vol. 16, p. 367 (1890) (*Amytta*); W. Africa : Barombi. Kirby, Syn. Cat. Orth. Vol. 2, p. 373 (1906).
7. *A. occidentalis*, Karsch, ibidem, p. 264 (1890) (*Amytta*); Kirby, ibidem, W. Africa : Kribi. p. 373 (1906).
8. *A. pellucida*, Karsch, Wien. Ent. Zeit. Vol. 7, p. 161 (1888) (*Amytta*); E. Africa. Kirby, ibidem, p. 373 (1906).

8. GENUS ACILACRIS, BOLIVAR

Acilacris. Bolivar, Journ. Sc. Lisb. (2), Vol. 1, p. 219 (1890); Kirby, Syn. Cat. Orth. Vol. 2, p. 372 (1906).

Characters. — (The original after the author). « Fastigium verticis conicum haud deflexum, articulo primo antennarum parum breviore, cum fastigio frontis haud contiguum. Frons transversa, valde reclinata. Antennæ longiusculæ, articulo primo magno, secundo tertioque cylindricis subaequæ longis. Oculi parvi, globosi. Pronotum latum, postice productum, dorso subcylindrico, lobis deflexis rotundatis. Elytra sub pronoto abscondita. Coxæ anticæ spina acuta, longa, armatae. Femora omnia subtus sulcata, postica crassiuscula, subtus marginibus serratis. Tibiæ anticæ compressiusculæ, medio angustatae, utrinque tympano aperto instructæ, subtus spinosæ, tibiæ posticæ supra apinis apicalibus armatae. Pectus latum, transversum, prosterno inermi. Lamina supra-analis brevissima. Cerci elongati, conici. Lamina subgenitalis medio elongata, sursum curvata, apice tridentata. Stylis nublis ♂. »

Type. — *Acilacris tridens*, Bolivar,

Geographical distribution of species. — South Africa.

1. *A. tridens*, Bolivar, Journ. Sc. Lisb. (2), Vol. 1, p. 220, pl. 1, f. 10, Angola. 10a-b (1890); Kirby, Syn. Cat. Orth. Vol. 2, p. 372 (1906). — **Plate 2, Fig. 4.**

SUBFAM. PHYLLOPHORINÆ

The Phyllophorinæ is a small subfamily of Locustidæ which has been sometimes classed with the Mecopodinæ. From that subfamily however it is amply distinct in the character of the posteriorly produced pronotum, which here extends back over the base of the abdomen in the form of a hood while in Mecopodinæ it is not hood-like nor posteriorly produced. The pronotum of the species of this interesting little group of katydids is always spinose, dentate or crenulate along the lateral margins.

Besides the pronotal characters mentioned above this subfamily is characterized by having the tarsi more or less depressed, the anterior tibiae provided with open linear or shell-shaped foramina, the antennæ inserted between the eyes, located further from the clypeal suture than from the top of the head. The first and second tarsal segments are longitudinally sulcate laterally and the posterior tibiae are provided with apical spines on both sides above. The prosternum is armed with a pair of spines or tubercles. The elytra of these insects are remarkable in so much as those of the male have no stridulating tympani as is usually present in other katydids. It is very unlikely that any sound is produced in the ordinary manner by these locustids, but members of both sexes probably stridulate by means of a remarkable and interesting harp-like formation of the metasternal lobes and the posterior coxae. This organ is described by Dr. J. Carl in *Arch. Sc. Phys. & Natur.* Vol. 22, p. 2, October, 1906. The coxae bear a series of parallel transverse striae which, when drawn over a series of stout tubercles situated on the elevated edge of the metasternal plates, make the sound. Carl found them in *Sasima spinosa*, males, *Hyperhomala lanceolata*, female, and the male of another species of *Hyperhomala*. The organ is distinct and easily observed in a male of *Hyperhomala woodfordi* from the Salomon Islands. — **Plate I, Fig. II.**

But little is recorded of the life or habits of these insects so far as known to the writer. Like the greater majority of the Locustidæ they are probably leaf feeders.

For those desiring to study this group the following three references are given, being three of the more recent and most important contributions to the classification of this subfamily :

- Brunner von Wattenwyl, Abh. Senckenb. Ges. Frankfurt, Vol. 24, p. 259-265 (1898).
- Kirby, Ann. Nat. Hist. Vol. 4, p. 302-311 (1899).
- Bolivar, Ann. Mus. Nat. Hung. Vol. 1, p. 172-178 (1903).

The five genera comprising this subfamily may be separated as follows :

TABLE OF GENERA OF SUBFAMILY PHYLLOPHORINÆ

1. Foramina of the anterior tibiae linear or shell-shaped	} 1. Genus PHYLOPHORA, Thunberg. } 2. Genus HYPERHOMALA, Serville.
— Foramina of the anterior tibiae open	
2. Pronotum longer than broad	2.
— Pronotum broader than long	3.
3. Lateral carinae of the pronotum armed with long spines	5. Genus STRONGYLODERUS, Westwood 1).
— Lateral carinae of the pronotum crenulate or densely, but more briefly, spinose	3. Genus SASIMA, Bolivar. 4. Genus SILIQUOFERA, Bolivar.

1) This genus is probably not a member of this subfamily, the characters in fact rather indicating a relationship with the subfamily Mecopodinæ. The only known specimen, the type, being a nymph its correct systematic position will have to await future investigation.

I. GENUS PHYLLOPHORA, THUNBERG

Phyllophora, Thunberg, Mém. Acad. St-Pétersb. Vol. 5, p. 219, 286 (1815); Kirby, Syn. Cat. Orth. Vol. 2, p. 369 (1906).

Characters. (After Bolivar.) — « Pronoto plus minusve rhomboidali, carinis crenulatis, sed angulis humeralibus dente vel spina majore instructis vel rotundatis; lobis deflexis margine postico prope sinum humeralem distincte lobatis.

Elytra postice raro ampliata, plerumque marginibus antico postique subparallelis, apice acuminata.

Tibiæ anticae tympano 1) rimato; tibiæ posticæ supra concaviusculæ. »

Type. — *Phyllophora speciosa*, Thunberg.

Geographical distribution of species. — East Indies, Australia.

1. <i>P. brunnea</i> , Kirby, Ann. Nat. Hist. (7), Vol. 4, p. 307 (1899).	Ceram.
2. <i>P. eburneiguttata</i> , Kirby, ibidem, p. 307, pl. 6, f. 5 (1899).	New Guinea, Fly River.
3. <i>P. ? horvathi</i> , Bolivar, Ann. Mus. Nat. Hungar. Vol. 1, p. 176 (1903).	New Guinea.
4. <i>P. media</i> , Walker, Cat. Derm. Salt. Brit. Mus. Vol. 3, p. 431 (1870).	Ceylon.
5. <i>P. ovalifolia</i> , Kirby, Ann. Nat. Hist. (7), Vol. 4, p. 308, pl. 6, f. 4 (1899).	Torres Straits.
6. <i>P. speciosa</i> , Thunberg, Mém. Acad. St-Pétersb. Vol. 5, p. 286, pl. 3 ? (1815).	

2. GENUS HYPERHOMALA, SERVILLE

Hyperhomala, Serville, Ann. Sc. Nat. Vol. 22, p. 161 (1831); Kirby, Syn. Cat. Orth. Vol. 2, p. 368 (1906).

Characters. (After Serville.) — Elytres membraneuses, ainsi que les ailes; les unes et les autres (de longueur égale) entièrement recouvertes par le métathorax.

Palpes maxillaires au moins deux fois plus longues que les labiales; leur dernier article allongé, en cône reversé, tronqué au bout.

Antennes longues, très espacées entre elles à leur insertion; leur premier article gros, presque cylindrique, le second court, presque globuleux; le troisième cylindrique, aussi long que les deux premiers pris ensemble; les autres à peu près égaux entre eux et cylindriques.

Tête aussi large que la partie antérieure du corselet; sa face verticale; entre les yeux une carène transversale, interrompue au milieu.

Yeux petits, globuleux, presque pédiculés.

Vertex très plan.

Corselet très plan, fortement caréné sur ses côtés; les carènes denticulées.

Prothorax de la longueur du vertex, distinctement séparé du mésothorax par un sillon transversal complet.

Mésothorax un peu moins large que le prothorax, séparé du métathorax par un sillon transversal, peu apparent sur le milieu du dos, et irrégulier dans cette partie.

Métathorax extraordinairement long, dépassant un peu l'abdomen (du moins dans l'insecte mort), paraissant ovale vu en dessus, tronqué à sa partie antérieure, presque aigu postérieurement, un

1) Foramina as used in this article.

peu bombé transversalement vers le tiers de sa longueur, portant au milieu une ligne longitudinale sensible, peu élevée ; cette ligne comme sillonnée dans son milieu et donnant au méthorax l'apparence de deux élytres soudées à leur suture ; côtés du métathorax, après la carène, rabattus et embrassant ceux de l'abdomen, comme les élytres des Piméliaires (ordre des Coléoptères).

Ménosternum et métasternum étroits, creusés au milieu, profondément échancrés postérieurement : leurs bords latéraux très relevés.

Appendices de l'anus sétacés, assez longs.

Corps très court.

Pattes antérieures et intermédiaires de moyenne longueur ; cuisses denticulées en dessous.

Jambes antérieures dilatées et creusées à leur base.

Pattes postérieures allongées, cuisses longues, médiocrement renflées, munies d'épines en dessous ; jambes allongées, garnies de trois rangées d'épines très fines, deux en dessus et une en dessous. »

Type. — *Hyperhomala virescens*, Serville.

Geographical distribution of species. — East Indies, Australia?

1. <i>H. angustata</i> , Brunner, Abhandl. Senckenb. Ges. Vol. 24, p. 264 (1898).	New Guinea.
2. <i>H. habasqui</i> , Le Guillon, Rev. Zool. p. 294 (1841) (<i>Phyllophora</i>).	New Guinea.
3. <i>H. inermis</i> , Walker, Cat. Derm. Salt. Brit. Mus. Vol. 3, p. 431 (1870) ?	
(Phyllophora).	
4. <i>H. keyica</i> , Brunner, Abh. Senckenb. Ges. Frankfurt, Vol. 24, p. 236 (1898) (<i>Phyllophora</i>).	Key Island.
5. <i>H. lanceolata</i> , Brunner, ibidem, p. 263, pl. 19, f. 49 (1898).	Moluccas, New Guinea.
6. <i>H. philippinica</i> , Brunner, ibidem, p. 262 (1898).	Philippines.
7. <i>H. variegata</i> , Brunner, ibidem, p. 264 (1898).	New Guinea.
8. <i>H. virescens</i> , Serville, Ann. Sc. Nat. Vol. 22, p. 163 (1831). — Plate 2 , Fig. 10.	Australia? New Zealand?
9. <i>H. woodfordi</i> , Kirby, Ann. Nat. Hist. (7), Vol. 4, p. 309, pl. 6, f. 6 (1899) (<i>Phyllophora</i>). — Plate 1 , Fig. 11.	Solomon Islands.

3. GENUS SASIMA, BOLIVAR

Sasima, Bolivar, Ann. Mus. Nat. Hung. Vol. 1, p. 172, 173 (1903); Kirby, Syn. Cat. Orth. Vol. 2, p. 367 (1906).

Characters. (After Bolivar.) — « Pronoti disco rhomboidali, carinis spinis armatis, spina humerali magna ; lobis deflexis postice haud lobatis.

Elytra apicem versus sensim ampliata, apice rotundata.

Tibiæ anticæ tympano 1) aperto ; tibiæ posticæ supra deplanatæ. »

Type. — *Phyllophora spinosa*, Brunner.

Geographical distribution of species. — East Indies.

1. <i>S. amplifolia</i> , Walker, Cat. Derm. Salt. Brit. Mus. Vol. 3, p. 431 (1870) (<i>Phyllophora</i>); Kirby, Syn. Cat. Orth. Vol. 2, p. 368 (1906).	Malay Peninsula, Tringany.
2. <i>S. areolata</i> , Bolivar, Ann. Mus. Nat. Hungar. Vol. 1, p. 174 (1903).	Waigiou.
3. <i>S. aruana</i> , Kirby, Ann. Nat. Hist. (7), Vol. 4, p. 303, pl. 6, f. 7 (1899) (<i>Phyllophora</i>).	Aru, New Guinea.
4. <i>S. beccarii</i> , Griffini, Zool. Anz. Vol. 32, p. 644 (1908).	Key Island.

1) Foramina as used by the writer in this work.

5. *S. lactuca*, Bolivar, Ann. Mus. Nat. Hungar. Vol. 1, p. 175 (1903). New Guinea.
6. *S. spinosa*, Brunner, Abh. Senckenb. Ges. Frankfurt, Vol. 24, p. 261, New Guinea.
pl. 19, f. 47 (1898) (*Phyllophora*). — **Plate 2, Fig. 12.**
7. *S. truncata*, Brunner, ibidem, p. 262, pl. 19, f. 48 (1898) (*Phyllophora*). New Guinea.

4. GENUS SILIQUOFERA, BOLIVAR

Siliquofera. Bolivar, Ann. Mus. Nat. Hungar. Vol. 1, p. 178 (1903); Kirby, Syn. Cat. Orth. Vol. 2, p. 369 (1906).

Characters. (After Bolivar.) — « Pronoti disco lanceolato, angulis humeralibus rotundatis, carinis uniformiter crenulatis; lobis deflexis margine postico haud lobato. Elytra retrorsum haud ampliata, apice late rotundata. Tibiae anticae 1) aperto; tibiae omnes supra deplanatae. »

Type. — *Phyllophora grandis*, Blanchard.

Geographical distribution of species. — Australia.

1. *S. grandis*, Blanchard, Voy. Pôle Sud, Zool. Vol. 4, p. 364, Orth. pl. 3, New Guinea, Aru Island, f. 3 (1853) (*Phyllophora*); Kirby, Syn. Cat. Orth. Vol. 2, p. 369 Waigiou.
(1906). — **Plate 2, Fig. 11.**
virescens, Brunner von Wattenwyl, Abh. Senckenb. Ges. Frankfurt, Vol. 24, p. 265, pl. 20, f. 50 (1898) (*Hyperomala*).

5. GENUS STRONGYLODERUS, WESTWOOD ²⁾

Strongyloderus. Westwood, Zool. Journ. Vol. 5, p. 443 (1834); Kirby, Syn. Cat. Orth. Vol. 2, p. 369 (1906).

Characters (After Westwood). — « Thorax maximus, convexus, fere rotundatus, diametro transversali longitudinem tertia parte superante, lateribus serratis, disco tuberculis parvis instructo. Caput transversum, thorace immersum, vix dimidii thoracis latitudine; inter antennis dente parvo acuto canaliculato armatum; facie lata. Antennae tenues (in specimine nostro unico mutilato, tota parte superstite longitudinem corporis insecti sequante). Abdomen vix thorace longius, convexum, basi latum, sensim attenuatum. Pedes longitudine mediocres, validi, dentati, praesertim postici. Tibiae anticae basi subocellatae. Tarsi 4-articulati, brevis, articulo 3tio bilobo. Prosternum haud dentatum. »

Type. — *Strongyloderus serraticollis*, Westwood.

Geographical distribution of species. — Africa.

1. *S. serraticollis*, Westwood, Zool. Journ. Vol. 5, p. 444, pl. 22, f. 2 (1834). Malabar.

1) Foramina as used in this present work.
2) See foot note on p. 8.

SUBFAM. TYMPANOPHORINÆ

This is a small subfamily consisting of but two genera, one described many years ago and one just recently established. Both genera are monobasic, and nothing is recorded concerning the life history of the species. *Tympophora* is known only from the male while *Mortoniellus* is known only from the female. This makes a key for their separation infeasible but as one genus is winged and known only from Australia and the other is apterous and known only from Sumatra this does not so much matter.

I. GENUS TYMPANOPHORA, WHITE

Tympophora. White, Grey' Journ. Exped. Austral. Vol. 2, p. 468 (1841); Kirby, Syn. Cat. Orth. Vol. 2, p. 229 (1906).

Characters. — *Male* the *female* unknown. — Vertex rounded, terminating in a sulcate fastigium. Eyes prominent, elongate. Ocelli present, three in number, inserted in a triangle similar to certain Mantidæ. Antennæ long and slender, inserted between the eyes. Front broad, short and flat, without carinæ. Pronotum a little constricted, not covering the head; principal transverse sulcus situated much before the middle; prozona somewhat rounded. Elytra with simple venation, the tympanii well developed; wings completely covered by the elytra. Anterior coxæ toothed; anterior and intermediate femora very short, the posterior ones very long; the anterior tibiæ provided with linear foramina, unarmed above, below armed with a series of strong spines; posterior tibia with a terminal spur above on the outer side only. Genital organs as in the Saginæ.

Type. — *Tympophora pellucida*, White.

Geographical distribution of species. — Australia.

1. *T. pellucida*, White. Grey' Journ. Exped. Austral. Vol. 2, p. 468, f. Australia.
(1841); Brunner, Ann. Mus. Genova, Vol. 33, p. 182 (1893); Kirby,
Syn. Cat. Orth. Vol. 2, p. 229 (1906). — **Plate I, Fig. I.**

2. GENUS MORTONIELLUS, GRIFFINI

Mortoniellus. Griffini, Wien. Ent. Zeit. Vol. 28, p. 107 (1909).

Characters. — *Female*, the *male* unknown. — Head large, anteriorly somewhat depressed; occiput transversely convex, elevated; vertex convex, anteriorly declivate; fastigium of the vertex contiguous with that of the front, both bearing ocelli; antennæ slender, situated between the eyes, the basal segment swollen, unarmed. Eyes large, prominent, ovately rounded. Front transverse, sparsely punctate, transversely rugose. Mandibles stout; palpi rounded apically.

Pronotum very unequal, posteriorly somewhat elevated, from a top view as broad as long, the anterior margin broadly concave with a recurved border; transverse sulci distinct and continued across

the lateral lobes; lateral and median carinæ absent; lateral lobes very narrowly rounded below, the humeral sinus shallow. Pro-, meso- and metasterni each with a pair of moderately long apically rounded tubercles.

Legs moderate; all femora above punctate with minute granules, on the outer side, principally posteriorly, provided with parallel transverse sulci, sulcate ventrally and unarmed; anterior coxae armed; anterior femora somewhat rounded, the inner apical lobe minutely spinose, the outer lobe smooth; middle femora similarly formed, both apical lobes minutely spined; for and middle tibiæ rounded above, armed below on both sides with five spines; anterior tibiæ unarmed above and furnished with linear foramina; intermediate tibiæ furnished above with one basal spine situated towards the hind margin. Posterior femora long, strongly swollen basally, slender in the apical half, the apex stouter, both genicular lobes spinose; posterior tibiæ long and slender, flat above and with many spinules on both margins, beneath towards the apex with three or four short slender spines; apical spurs five in number, one above on the outer margin and four beneath, two longer ones embracing two shorter ones. Tarsi moderate, the first joint laterally lightly sulcate, beneath furnished with a free plantula as in the Decticinæ.

Wings and elytra entirely absent.

Abdomen moderately slender; supraanal plate short; ovipositor robust, compressed, gently curved upwards, obliquely acuminate apically, the upper and lower margins finely serrate; subgenital plate slightly sinuate apically.

Type. — *Mortoniellus karnyi*, Griffini.

Geographical distribution of species. — Sumatra.

1. *M. karnyi* Griffini, Wien. Ent. Zeit. Vol. 28, p. 108, f. A, B. C (1909). Sumatra.

— Plate I, Fig. 7.

SUBFAM. PHASGONURINÆ

This is one of the smaller subfamilies of the Locustidæ and comprises mostly large species representing in their geographical distribution most of the Old World. Structurally the forms comprising this group are very closely allied to the members of the subfamily Decticinæ, some species, in fact, being about as eligible for membership in that group as in this, the main character separating them, the presence of a free plantula beneath the first segment of the hind tarsi in the Decticinæ, being very distinctly developed in some members of the Phasgonurinæ. (Plate I, Fig. 9.)

The distinguishing characters of the group are as follows :

Antennæ inserted between the eyes. Prosternum bispinose; pronotum variously developed, sometimes much produced posteriorly over the base of the elytra and sometimes but moderately produced, the lateral carinæ sometimes rounded and sometimes acute. Tarsi depressed, four jointed, the first and second segments laterally sulcate, the first segment of the hind tarsi furnished beneath with a short free plantula, or without any. Anterior tibiæ sulcate laterally, armed above on the outer side, an apical spine being always present; tympani shell-shaped, or linear; posterior tibiæ armed beneath with two apical spines on each side and above with one on each side. Organs of flight usually well developed, sometimes abbreviated or abortive, especially in the female; tympanii well developed in the winged males. Ovipositor usually about as long as the hind femora and variable in shape, being gently curved either upwards or downwards, or nearly straight.

The five genera composing this subfamily are separated as follows :

TABLE OF GENERA OF SUBFAMILY PHASGONURINÆ

1. <i>Fastigium of the vertex scarcely broader than the basal segment of the antenna</i>	2.
— <i>Fastigium of the vertex noticeably broader than the basal segment of the antenna</i>	4.
2. <i>Elytra and wings fully developed. Occiput horizontal</i>	3.
— <i>Elytra abbreviated. Occiput declivate</i>	1. Genus AMPHIESTRIS, Fieber. <i>Gen. 1.</i>
3. <i>Pronotum deeply sulcate transversely</i>	3. Genus GLYPHONOTUS, Redtenbacher.
— <i>Pronotum not deeply sulcate transversely</i>	5. Genus PHASGONURA, Stephens. <i>Gen. 2.</i>
4. <i>Pronotum with acute persistent lateral carinae</i>	4. Genus ONCONOTUS, Fischer von Waldheim.
— <i>Pronotum with the lateral carinæ rounded, or distinct only</i> <i>behind the middle</i>	2. Genus CALLIPHONA, Krauss.

I. GENUS AMPHIESTRIS, FIEBER

Amphiestris. Fieber, Lotos, Vol. 3, p. 187 (1853); Kirby, Syn. Cat. Orth. Vol. 2, p. 220 (1906).

Barbitistes. Rambur, Faune Andal. Vol. 2, p. 53 (1839). — Not Charpentier (1825).

Characters. (Translation from Bolivar.) — « Body short and stout. Head large and convex; tubercle of the vertex compressed, narrow, sulcate above; antennæ longer than the body. Pronotum

rounded above, a little elevated in front and somewhat more posteriorly, without lateral carinæ. Prosternum with two filiform spines; sternal lobes acute. Elytra short, squamiform; attenuate towards the posterior extreme angle, covering the basal two thirds of the abdomen in the ♂, shorter and flat in the ♀. Wings absent. Legs stout, anterior coxæ spined, anterior femora sulcate ventrally, armed on the inner carina with six or eight small spines; hind legs more strongly spined; foramina closed; hind femora but little longer than the abdomen, with the inferior carina spiny and shorter than the corresponding tibiæ, these quadangular, with spines on all the carinæ, but more numerous on the posterior ones. Abdomen stout and short; infraanal plate with stylets; ovipositor ensiform. »

Type. — *Barbitistes baetica*, Rambur.

Geographical distribution of species. — Western Europe, Africa.

1. *A. Baetica*, Rambur, Faune Andal. Vol. 2, p. 54, pl. 3, f. 1, 2 (1839) Andalusia, Western Europe, (*Barbitistes*). — **Plate I, Fig. 6.** Algeria, Tunis.

2. GENUS CALLIPHONA, KRAUSS

Calliphona. Krauss, Zool. Anz. Vol. 15, p. 169 (1892); Kirby, Syn. Cat. Orth. Vol. 2, p. 219 (1906).

Characters. (Original after the author.) — « *Locustae* de Geer affine, differt fastigio verticis articulo primo antennarum latiore, antice subdilatato, pronoto rugoso, pone medium carinis lateribus distinctis instructo, lobis deflexis sub angulo recto insertis, angulo humerali indistincto, alis regulariter fusco-tessellatis, segmento anali ♂ maximo, deorsum curvato, ovipositor rectissimo. »

Type. — *Calliphrona koenigi*, Krauss.

Geographical distribution of species. — Europe.

1. *C. alluaudi*, Krauss, Actas Soc. Espan. Hist. Nat. Vol. 22, p. 50 (1893). Canaries.
2. *C. koenigi*, Krauss, Zool. Anz. Vol. 15, p. 170 (1892). Tenerife.

3. GENUS GLYPHONOTUS, REDTENBACHER

Glyphonotus. Redtenbacher, Wien. Ent. Zeit. Vol. 8, p. 31 (1889); Kirby, Syn. Cat. Orth. Vol. 2, p. 220 (1906).

Characters. — In this genus the vertex of the head is scarcely broader than the basal segment of the antennæ. The pronotum is deeply sulcate transversely, as in some species of the genus *Onconotus*, the lateral carinæ acute anteriorly, posteriorly rounded. Organs of flight fully developed. Hind tibiæ armed with an apical spine above on each side. Ovipositor gently curved upwardes and long, more than two times as long as the hind femora.

Type. — *Locusta thoracica*, Fischer von Waldheim.

Geographical distribution of species. — Asia.

1. *G. thoracicus*, Fischer von Waldheim, Orth. Ross. p. 150, pl. 21, f. 5 Alatau, Turcomania. Turkestan, Heptapotamia. (1846) (*Locusta*).

4. GENUS ONCONOTUS, FISCHER VON WALDHEIM

Onconotus. Fischer von Waldheim, Bull. Soc. Nat. Mosc. (1), Vol. 12, p. 106 (1839); Kirby, Syn. Cat. Orth. Vol. 2, p. 220 (1906).

Characters. — Here the pronotum has the lateral carinæ more or less acute. The fastigium of the vertex is noticeably broader than the basal segment of the antennæ. The organs of flight are short, often lobiform and, in female especially, wholly concealed beneath the posteriorly produced pronotum. Ovipositor usually distinctly decurved apically.

Type. — *Gryllus laxmanni*, Pallas.

Geographical distribution of species. — Europe, Asia.

1. *O. laxmanni*, Pallas, Reise, Vol. 1, p. 468 (1771) (*Gryllus*); Charpentier, South Russia, Siberia. Hor. Ent. p. 97 (1825) (*Bradyporus*); Fischer von Waldheim, Bull. Moscou, Vol. 12 (1), p. 108 (1839); Orth. Ross. p. 203, pl. 9, f. 7 (1846). — **Plate I, Fig. 5.**
tenuicaudus, Ivanoff, Trud. Kharkov Univ. Vol. 21, p. 310 (1888).
eversmanni, Fischer von Waldheim, Orth. Ross. p. 205, pl. 31, f. 8 (1846).
motschulskii, Fischer von Waldheim, ibidem, p. 206, pl. 31, f. 7 (1846).
coriaceus, Fischer von Waldheim, ibidem, p. 207, pl. 31, f. 9 (1846).
boschnakii, Fischer von Waldheim, ibidem, p. 208, pl. 31, f. 6 (1846).
2. *O. marginatus*, Fabricius, Ent. Syst. Suppl. p. 193 (1798) (*Locusta*); South Russia. Burmeister, Handb. Ent. Vol. 2, p. 678 (1838) (*Bradyporus*); Kirby Syn. Cat. Orth. Vol. 2, p. 220 (1906).
3. *O. servillei*, Fischer von Waldheim, Orth. Ross. p. 204, pl. 25, f. 4, 5 S. E. Europe, Russia, Roumania. (1846).
crassicaudus, Ivanoff, Trud. Kharkov Univ. Vol. 21, p. 317 (1888).

5. GENUS PHASGONURA, STEPHENS

Phasgonura. Stephens, Ill. Brit. Ent. Mand. Vol. 6, p. 15 (1835); Kirby, Syn. Cat. Orth. Vol. 2, p. 216 (1906).

Eumenymus. Pictet, Mem. Soc. Sc. Phys. et Nat. Genève (6), Vol. 30, p. 58 (1888).

Characters. — The members of this genus has the fastigium of the vertex scarcely broader than the basal segment of the antennæ. The organs of flight are fully developed but in some species they are much longer than in others. The ovipositor is usually long and generally curved more or less distinctly downwards. They are rather large green insects and the tympanum of the elytra in the ♂ is large and well developed. The hind tarsus often has a distinct plantula. (**Plate I, Fig. 9.**)

Type. — *Gryllus (Tettigonia) viridissima*, Linnæus.

Geographical distribution of species. — Europe, Asia, Africa.

1. *P. algerica*, Bolivar, Actas Soc. Espan. Hist. Nat. Vol. 22, p. 24, 25 Algeria. (1893) (*Locusta*).
2. *P. cantans*, Fuessly, Verz. Schweiz. Ins. p. 23, pl. 1, f. 5a, b (1775) N. & E. Europe, Alps. Pyrenees, Irkutsk, Armenia.
gavarniensis, Serville, Ins. Orth. p. 530 (1839) (*Locusta*).

3. *P. caudata*, Charpentier, Orth. pl. 33 (1845) (*Locusta*); Kirby, Syn. Cat. Orth. Vol. 2, p. 218 (1906).
kolenatii, Fischer von Waldheim, Orth. Ross. p. 145, pl. 29, f. 1, 2 (1846) (*Conocephalus*).
longicauda, Eversmann, Addit. p. 8, pl. A, f. 2, 2a, b (1848).
prasina, Fieber, Kelch' Grundl. Orth. p. 3 (1852).
flava, Nedelkow, Period. Zeitschr. Bulg. Lit. Geselsch. Sophia, Vol. 68, p. 430 (1907) (*Locusta*).
4. *P. hispanica*, Bolivar, Actas. Soc. Esp. Hist. Nat. Vol. 22, p. 24 Spain.
(1893) (*Locusta*).
5. *P. marginifera*, Walker, Cat. Derm. Salt. Brit. Mus. Vol. 2, p. 284 Africa.
(1869) (*Locusta*).
6. *P. savignyi*, Lucas, Expl. Algérie, Vol. 3, p. 14 (1819) (*Locusta*); Savigny Descr. Egypte Orth. pl. 4, f. 1 (1813).
7. *P. vaucheriana*, Pictet, Mém. Soc. Sc. Phys. et Nat. Genève, Vol. 30 (6), p. 59, pl. 3, f. 36 (1888) (*Eumenenymus*); Kruss, Zool. Jahrb. Syst. Vol. 9, p. 545 (1896) (*Locusta*); Kirby, Syn. Cat. Orth. Vol. 2, p. 219 (1906).
maroccana, Bolivar, Actas. Soc. Esp. Hist. Nat. Vol. 22, p. 23, 25 (1893).
8. *P. viridissima*, Linnæus, Syst. Nat. (ed. 10), Vol. 1, p. 430 (1757) (*Gryllus Tettigonia*); Faun. Suec. (ed. 2), p. 237 (1761); Fabricius, Syst. Ent. p. 286 (1775) (*Locusta*); Thunberg, Mém. Acad. St-Pétersb. Vol. 5, p. 278 (1815) (*Conocephalus*); Stephens, Vol. 3, Brit. Ent. Mand. Vol. 6, p. 16 (1825). — **Plate I, Fig. 2.**
viridis cantatrix, De Geer, Mém. Ins. Vol. 3, p. 428 (1773) (*Locusta*).
flava, Nedelkow, Period. Zeitschr. Bulg. Lit. Ges. Sophia, Vol. 68, p. 430 (1907) (*Locusta*).

S. E. Europe, W. & Central Asia.
Algeria, Egypt.
Tangier.
Europe, North Africa, North and West Asia.

SUBFAM. PHASMODINÆ

The Phasmodinæ are a group of Locustidæ composed of two genera, each consisting of a single species which, especially *Phasmodes ranatiformis*, bears a close superficial resemblance to certain of the Phasmidæ, or walkingsticks. The group is not a natural one and should by rights be divided, as one of its component genera has well developed open foramina while the other is entirely without hearing organs. There is nothing recorded on the life history or habits of the members of the group, which are all rare creatures, *Phasmodes* being known only from a single imperfect female in the British Museum. The two genera may be separated by the following key :

TABLE OF GENERA OF THE SUBFAMILY PHASMODINÆ

1. <i>Apterous, at least in the female; foramina absent.</i>	1. Genus <i>PHASMODES</i> , Westwood.
— <i>Winged in both sexes; foramina well developed, open</i>	2. Genus <i>ZAPROCHILUS</i> , Caudell.

I. GENUS PHASMODES, WESTWOOD

Phasmodes. Westwood, Arcana Entom. Vol. 2, p. 56 (1845); Karsch, Ent. Nachr. Vol. 17, p. 98 (1891); Kirby, Syn. Cat. Orth. Vol. 2, p. 355 (1906).

Characters. — Female, the male unknown. — Phasmid-like in form, the body elongate and parallel, the abdomen scarcely thickened mesially. Head horizontal; palpi elongate; antennæ with the basal segment elongate and compressed. Prothorax elongate, slightly depressed; prosternum unarmed; meso- and metathorax short, unarmed beneath but marked mesially with a longitudinal depression. Abdomen twice as long as the thorax, noticeably tapering towards the apex and consisting of nine distinct segments. Ovipositor nearly as long as the abdomen, straight and tapering.

Legs slender, the four anterior ones equal in length, the anterior tibiæ without foramina; tarsi four jointed, pilose, the third joint cordate. Elytra and wings entirely absent.

Type. — *Phasmodes ranatiformis*, Westwood.

Geographical distribution of species. — Australia.

1. *P. ranatiformis*, Westwood, Arcana Ent. Vol. 2, p. 56, pl. 63, f. 4 Australia.
(1845); Kirby, Syn. Cat. Orth. Vol. 2, p. 355 (1906). — **Plate 2, Fig. 1.**

2. GENUS ZAPROCHILUS, CAUDELL

Zaprochilus. Caudell, Proc. Ent. Soc. Wash. Vol. 11, p. 114 (1909).

Prochilus. Brullé, Hist. Nat. Ins. Vol. 9, p. 134 (1835); Serville, Ins. Orth. p. 383 (1839); Blanchard, Hist. Nat. Ins. Vol. 3, p. 20 (1840); Karsch, Ent. Nachr. Vol. 17, p. 98 (1891); Kirby, Syn. Cat. Orth. Vol. 2, p. 355 (1906).

Characters. — In general appearance bearing a superficial resemblance to winged Phasmidæ. Head moderate, horizontal, no longer than the pronotum; antennæ pubescent, the basal segment flattened. Pronotum elongate, the prosternum unarmed. Abdomen slender, apically truncate, the ovipositor long, over twice as long as the pronotum, almost as long as the abdomen. Legs slender; posterior femora long and very moderately swollen basally; anterior femora apically thickened, somewhat curved; anterior tibiæ with well developed open foramina. Elytra long and narrow, similar in shape to those of certain winged Phasmids; wings ample, as long as the elytra and over six times as broad, when closed hidden under the elytra.

Type. — *Prochilus australis*, Brullé.

Geographical distribution of species. — Australia.

1. *Z. australis*, Brullé, Hist. Nat. Ins. Vol. 9, p. 134 (1835) (*Prochilus*). — Australia.

Plate 2, Fig. 2.

SUBFAM. BRADYPORINÆ (= DERACANTHINÆ)

This subfamily is composed of half a dozen somewhat closely allied genera of clumsy, heavy bodied insects, often of bright colors. The species are mostly of long standing, having been described, and usually well figured, by early authors.

The members of this group occur in Europe and Asia. They seem to prefer open infertile country where they live on the ground or on shrubbery, etc. The males stridulate all day long, according to remarks made on a common European species by Brunner, and the female is almost certain to be found near by.

Finding no character tenable for the separation of the six genera here discussed into two groups I feel constrained to suppress the subfamily Dearacanthinæ. It is accordingly sunk into the synonymy under Bradyporinæ.

The Bradyporinæ are insects with short legs and large heavy bodies. They have four-jointed tarsi which are more or less depressed and provided with rounded or spinose pads beneath; hind tarsi with the third joint shorter than the second. Anterior and posterior tibia furnished above with an apical spine on each side, the anterior tibia with foramina. Antennæ situated below the eyes or between their lower margins, nearer the clypeal suture than the top of the head. The prosternum is either unarmed or armed with a pair of spines. Elytra concealed beneath pronotum, or usually so, of similar structure in both sexes.

The genera of Bradyporinæ may be separated as follows :

TABLE OF GENERA OF BRADYPORINÆ *Ab.*

1. Eyes convex, but little prominent	2.
— Eyes globose, very prominent	3.
2. Ovipositor almost twice as long as the pronotum	1. Genus BRADYPORUS, Charpentier.
— Ovipositor scarcely longer than the pronotum	2. Genus CALLIMENUS, Fischer von Waldheim.
3. Fastigium of the vertex tubercularly compressed between the bases of the antennæ	3. Genus DERALLIMUS, nov. gen.
— Fastigium of the vertex not tubercularly compressed between the bases of the antennæ	4. Genus DERACANTHA, Fischer von Waldheim.
4. Pulvilli of the tarsi rounded	5. Genus IDIODERUS, Lucas.
— Pulvilli of the tarsi spinose.	6. Genus ZICHYA, Balivar.

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I. GENUS BRADYPORUS, CHARPENTIER

Bradyporus. Charpentier, Hor. Ent., p. 96 (1825); Kirby, Syn. Cat. Orth. Vol. 2, p. 175 (1906).

Dinarchus. Stål, Rec. Orth., No. 2, p. 7, 24 (1874) (Type = *Locusta dasypus*, Illiger).

Characters. — Head large and broad, the vertex broad, rounded, declivate; Antennas situated distinctly below the eyes, nearer the clypeus than the top of the head. Eyes convex, but little prominent. Pronotum scarcely as broad anteriorly as the head, with distinct lateral and median carinæ on the posterior portion, the lateral lobes subvertical, distinctly longer than high; prosternum inconspicuously bispinose. Abdomen large and plump, roughened; supraanal plate of ♂ rounded; subgenital plate of ♂ truncate, of ♀ emarginate; cerci of ♂ short, thick, conical; ovipositor nearly as long as the abdomen, very slightly curved upwards and smooth.

Wings concealed beneath the pronotum; legs short, the hind femora not saltatorial and short, scarcely longer than the pronotum.

Type. — *Locusta dasypus*, Illiger.

Geographical distribution of species. — Europe.

1. *B. dasypus*, Illiger, Wiedem. Arch. Zool. (2), Vol. 1, p. 144 (1800) (*Locusta*). Servia, Bulgaria, Roumania, etc.
— Plate I, Fig. 10.

2. GENUS CALLIMENUS, FISCHER VON WALDHEIM

Callimenus. Fischer von Waldheim, Notice sur le Tettigopsis, p. 14 (1830); Kirby, Syn. Cat. Orth. Vol. 2, p. 175 (1906); Shuguroff, Rev. Russe d'Ent. p. 176 (1906).

Callimus. Fischer von Waldheim, Bull. Moscou, Vol. 6, p. 374 (1833). — A misspelling.

Characters. — Very similar to the preceding genus. Having no specimens for study a detailed description is necessarily omitted. The rather unsatisfactory illustration of the type species by Jacobson & Bianchi shows the vertex as apparently narrower than in *Bradyporus* and the median carina of the pronotum less distinct.

In his original establishment of this genus the author specifically indicates the type as *Locusta onos* Pallas. His subsequent designation as type the *Callimenus obesus* 1) is thus invalidated.

Type. — *Gryllus onos*, Pallis.

Geographical distribution of species. — Asia.

1. *C. onos*, Pallas, Spic. Zool. Vol. 9, p. 17, pl. 11, f. 1 (1772) (*Gryllus*): Mongolia, Transbaikal.
Fischer von Waldheim, Notice sur le Tettigopsis, p. 14 (1830).
2. *C. cinctus*, Fischer von Waldheim, Bull. Moscou, Vol. 6, p. 376 (1833) Siberia.
(*Deracantha*); Orth. Ross. p. 192, pl. 9, f. 1 (1846) (*Echippiger*).
1) Ann. Soc. Ent. France, Vol. 2, p. 318 (1833).

3. GENUS DERALLIMUS, NOV. GEN.

Characters. — Differing from the preceding genera especially by the ovipositor being shorter, or scarcely longer, than the pronotum (Plate 1, Fig. 8) and from the succeeding genera of the group by the shape of the eyes which in this genus are convex and but little prominent while in the following genera they are globose and very prominent.

This genus is proposed for the several species listed below, of which the *Locusta armadillo* of Thunberg is designated as the genotype. *Callimus* could be used for these species were it not for the

1) Ann. Soc. Ent. France, Vol. 2, p. 318 (1833).

fact that it is a misspelling of the genus *Callimenus* Fischer von Waldheim and I do not believe that misspellings should be perpetuated as valid names. That *Callimus* is a misspelling of *Callimenus* is made clear by referring to the works of Fischer quoted under the above genus and to Ann. Soc. Ent. Fr. Vol. 2, p. 318 (1833).

Type. — *Locusta armadillo*, Thunberg.

Geographical distribution of species. — Europe, Asia.

1. *D. Braunerii*, Shuguroff, Rev. Russ. d'Ent. p. 176, 177 (1906) (*Callimenus*). Valley of Mannich.
2. *D. dilatatus*, Stal, Bihang Svenska Akad. Vol. 3 (14), p. 42 (1876) (*Callimenus*). Asia Minor, Amasia.
→ *inflatus*, Brunner, Prodr. Eur. Orth., p. 253 (1882) (*Callimenus*).
3. *D. latipes*, Stal, Bihang Svenska Akad. Vol. 3 (14), p. 42 (1876) (*Callimenus*). Persia.
4. *D. longicollis*, Fieber, Lotos, Vol. 3, p. 205 (1853) (*Callimenus*). Servia, Turkey, Roumania.
→ *pancici*, Brunner, Prodr. Europ. Orth. p. 252, pl. 7, f. 58 (1882) (*Callimenus*).
5. *D. armadillo*, Thunberg, Mém. Acad. St-Pétersb. Vol. 5, p. 284 (1815) (*Locusta*). Greece, Turkey, Roumania, Russia, etc.
→ *nympha*, Stoll, Spectres, Saut. p. 24, pl. 11a, f. 44 (1813) (*Gryllus Tettigonia*).
→ *macrogaster*, Lefebure, Guerr. Mag. Zool. (2), Vol. 1, Ins. pl. 5 (1831) (*Ephippiger*).
→ *var. multituberculatus*, Fischer von Waldheim, Ann. Soc. Ent. France, Vol. 2, p. 374 (1833) (*Callimenus*). Caucasus.
→ *brachynotus*, Fieber, Lotos, Vol. 3, p. 206 (1853) (*Callimenus*).
6. *D. montandoni*, Burr, Trans. Ent. Soc. Lond. p. 51 (1898) (*Callimenus*); Roumania.
Shuguroff, Rev. Russ. d'Ent. p. 177, 180 (1906) (*Callimenus*).
7. *D. obesus*, Fischer von Waldheim, Notice sur le Tettigopsis, p. 14 (1830). Transylvania, Greece, Asia Minor, Russia, etc.
— **Plate I, Fig. 3-4.**
→ *oniscus*, Burmeister, Handb. Ent. Vol. 2, 377 (1838) (*Callimenus*).
→ *oniscus*, Shuguroff, Rev. Russ. d'Ent. p. 181 (1906) (*Callimenus*).
→ *var. intermedia*, Werner, Sitz. ber. Akad. Wien, Abt. 1, Bd. 110, p. 286 (1901) (*Callimenus*). Caucasus.
8. *D. restrictus*, Fischer von Waldheim, Bull. Moscou, Vol. 6, p. 375 (1833) S. Russia.
(*Callimenus*); Orth. Ross. p. 219, pl. 7, f. 3 (1846) (*Callimenus*).

4. GENUS DERACANTHA, FISCHER VON WALDHEIM

Deracantha. Fischer von Waldheim, Bull. Mosc. Vol. 6, p. 375 (1833); Kirby, Syn. Cat. Orth. Vol. 2, p. 177 (1906).

Deracanthiella, Bolivar, Zichy. Asiat. Forsch. Vol. 2, Zool., Ergebn., p. 240 (1901). — Type = *Deracantha aranea*, Fischer von Waldheim.

Characters. — In this genus the eyes are very prominent and globose and the fastigium of the vertex, instead of being broad and rounded as in the allied genera, is tubularly compressed between the bases of the antennae.

The *Gryllus* ones of Pallas has been designated as the type of this genus, but as that species was previously designated as the type of *Callimenus* it is untenable as the type of *Deracantha*. Were the second originally included species, *cinctus*, taken as the type of *Deracantha* the genus would fall as a synonym of *Callimenus*, *cinctus* being congeneric with *onos*, the type. Being desirous of retaining this old genus *Deracantha* I therefore designate *aranea* as the type, thus sinking the recent genus *Deracanthiella* of Bolivar in synonymy.

Type. — *Deracantha aranea* Fischer von Waldheim.

Geographical distribution of species. — Asia.

1. *D. antilope*, Fischer von Waldheim, Bull. Moscou, Vol. 6, p. 376 (1833). Siberia.
2. *D. aranea*, Fischer von Waldheim, ibidem, p. 376 (1833). Dauria.
3. *D. camelus*, Fischer von Waldheim, ibidem, p. 376 (1833). Dauria.
4. *D. verrucosa*, Fischer von Waldheim, Orth. Ross. p. 199, pl. 25, f. 3 (1846). Dauria, Mongalia.

**5. GENUS IDIODERUS, LUCAS**

Idioderus. Lucas, Ann. Soc. Ent. Fr. (5). Vol. 2, p. 102 (1873); Kirby, Syn. Cat. Orth. Vol. 2, p. 177 (1906).

Characters. (After Lucas.) — « Corpus crassum, maximum. Caput parvum, angustatum, ovatum, verticale, vertice mutico, fronto inter antennas depressa sulcatatque; oculi globosi, maxime proeminentes, non valde inter se distantes; antennæ non crassiusculæ, filiformes, setaceæ, elongatæ, marginem posteriorem sexti segmenti abdominalis superantes, sub oculis et intra eos in foveolis fere planis insertæ; labrum parvum, antice rotundatum transversimque ad basin profunde sulcatum; mandibulæ robustæ, vix extus sulcatæ; palpi maxillares elongati, filiformes, ultimo articulo vix longiore penultime, apice dilatato, rotundato tomentosoque. Pronotum maximum, latum; transversim profunde bisulcatum, antice fortiter coarctatum, utrinque postice tuberculato-spinosum, costis lateribus valde elevatis, denticulatis, ab primo sulco interruptis; disco longiore quam latiore, impressionibus lateribus parvis, postice non carinato, sed in medio transversim subelevato, ab gulis posticis ad basin late rotundatis. Prosternum breve, muticum in fæmina. Pectus (meso- et metasternum) latiore, emarginatum, transversim sulcatum. Elytra in fæmina squamæformia, incombentia, pronoto breviora, sub eo omnino recondita, fortiter reticulato-venosa. Pedes elongati, exilis, coxæ omnes spinosæ; femora subitus canaliculata, marginibus spinosis, postica basi non incrassata (non saltatoria); tibiæ femoribus tenuiter longiores, quadrangulares; non canaliculatæ, costis omnibus fortiter aculeatis; tarsi angusti, breves, articulo penultimo sensiter lobato. Abdomen crassissimum; maximum, ovato-elongatum, supra non carinatum, convexum rotundatumque, omnino glabrum; laminæ ventrales transversæ, breves, parvæ; cerci breves, crassi, spinosi; lamina subgenitalis in fæmina latior quam longior, postice in medio profunde emarginata; ovipositor ensiformis, curvatis, elongatus, omnino glaber. »

Type. — *Callimenus grandis*, Lucas.

Geographical distribution of species. — China.

1. *I. grandis*, Lucas, Bull. Soc. Ent. Fr. (4), Vol. 3, p. 20 (1863) (*Callimenus*); (5), ibidem, Vol. 3, p. 103, pl. 3 (1873). Pekin.

6. GENUS ZICHY, BOLIVAR

Zichy. Bolivar, Zichy, Asiat. Forsch. Vol. 2, Zool. Ergebni. pp. 236, 238 (1901); Kirby, Syn. Cat. Orth. Vol. 2, p. 178 (1906).

Characters. (Original description after the author.) — « Corpus crassum, vertex deflexus inter antennas, articulo primo antennæum vix latior, a fronte sulco angulato divisus; fastigio depresso, vix elongato, angulato-sulcato: punctis tribus ocelliformibus in trigonum dispositis, punctis duobus posticis inter se dimidio quam ab antico distantibus; scrobes antennarum intus distincte elevati. Oculi valde exserte, substylate. Pronotum antice rotundato-productum; lobo antico prope marginum carina trans-

versa instructo et utrinque spina armato; medio transverso, lateribus spinoso; lobis deflexis antice posticeque æque altis, marginibus calloso-subreflexis, angulo postico rotundato. Elytra sub pronoto abscondita; costa valida; margine expanso. Prosternum transverse carinatum, carina utrinque in spinam producto. Meso- et metasternum transversa, haud lobata, postice recta, lateribus dente minuto instructa. Coxæ anticæ spina armatæ, femora subtus deplanata subsulcata, marginibus brevitæ spinosis; femora postica gracilia. Tibiæ elongatæ, carinis superioribus obtusatis; tibiæ intermediæ femora tantum tertia parte superantes. Tarsi pulvillis acutissime spinosis. Abdomen subcylindricum; segmentis transverse cingulatis, margine postico late incrassato. Segmentum anale ♂ latissimum, cum lamina supraanali deflexa cognatum. Ceric validi, cylindrici, subincurvi, apice mucronate. Lamina subgenitalis ample, apice sinuata, styli crassiusculi. »

Type. — *Ephippiger vacca*, Fischer von Waldheim.

Geographical distribution of species. — Asia.

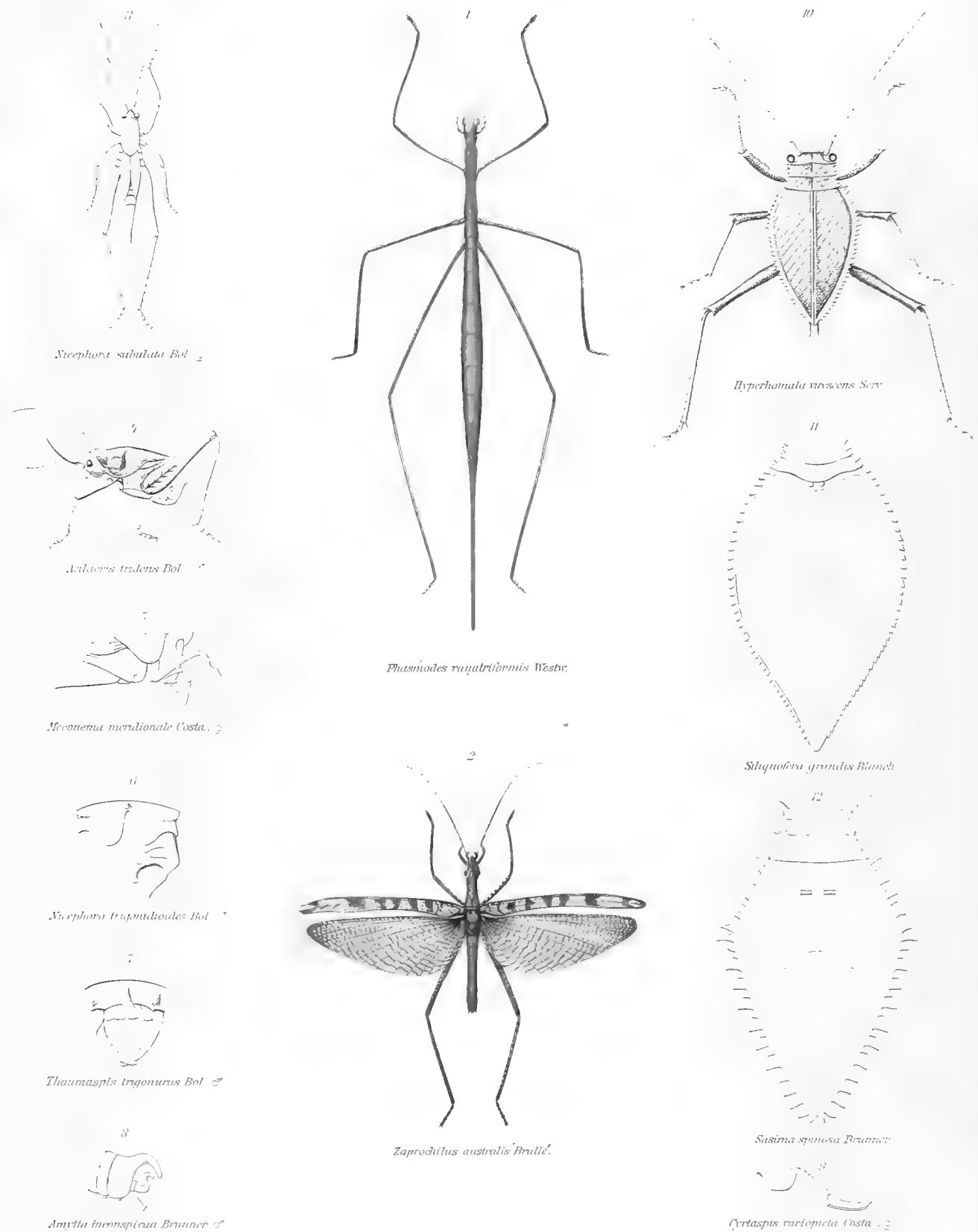
1. *Z. granulata*, Fischer von Waldheim, Bull. Soc. Nat. Moscou, Vol. 12, Altai.
p. 105, pl. 3, f. 1, 2 (1839) (*Ephippiger*).
2. *Z. spinosa*, Fischer von Waldheim, Orth. Ross. p. 195, pl. 27, f. 2a-c Irkutsk.
(1846) (*Ephippiger*). ~~Some specimens from the brownish Elytra from~~
3. *Z. taurus*, Eversmann, Bull. Soc. Nat. Moscou, Vol. 32 (1), p. 128, Kirghis Steppes.
pl. 1, f. 1 (1859) (*Ephippiger*).
4. *Z. vacca*, Fischer von Waldheim, Orth. Ross. p. 197, pl. 25, f. 1 (1846) Songaria, Kirghis Steppes.
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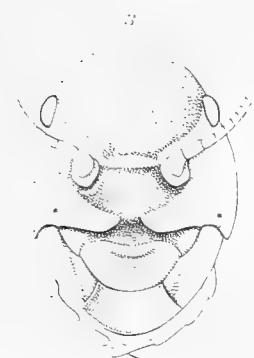
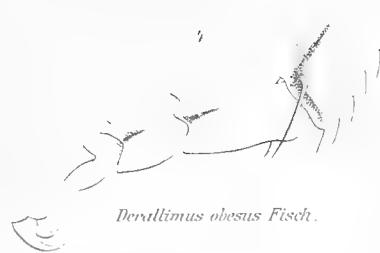
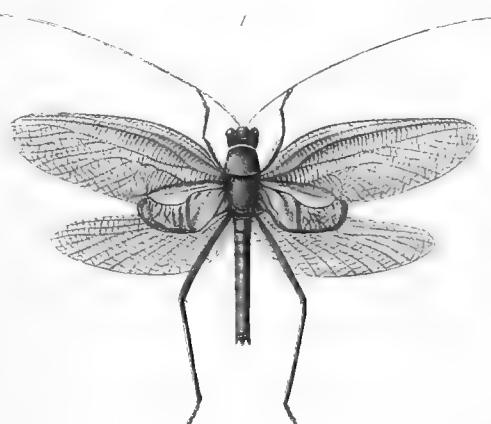
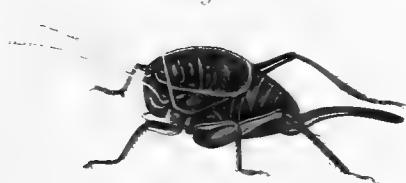
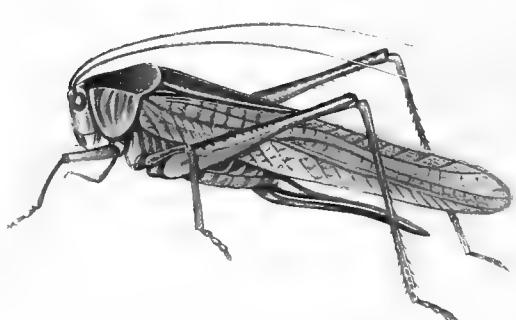
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<i>marginatus</i> , Fabr. (g. <i>Onconotus</i>)	15	Phasmodinæ (subfam.)	17	<i>vacca</i> , Fisch. (g. <i>Zichy</i>)	23
<i>marginifer</i> , Walk. (g. <i>Phasgonura</i>)	16	<i>philippinica</i> , Brunn. (g. <i>Hyperho-</i>		<i>varia</i> , Fabr. (g. <i>Meconema</i>)	4
<i>maroccana</i> , Bol. (g. <i>Phasgonura</i>)		<i>mala</i>)	9	<i>variegata</i> , Brunn. (g. <i>Hyperhomala</i>)	9
<i>mazerani</i> , Bol. (g. <i>Nicephora</i>)	4	Phyllophora (genus), Thunb.	8	<i>variopicta</i> , Costa (g. <i>Cyrtaspis</i>)	5
Meconema (genus), Serville	4	Phyllophorinæ (subfam.)	7	<i>vaucheriana</i> , Pictet (g. <i>Phasgonura</i>)	16
Meconeminæ (subfam.)	1	<i>prastina</i> , Fieb. (g. <i>Phasgonura</i>)	16	<i>verrucosa</i> , Fisch. (g. <i>Deracantha</i>)	22
<i>media</i> , Walk. (g. <i>Phyllophora</i>)	8	Prochilus (genus), Brulle	17	<i>virescens</i> , Serv. (g. <i>Hyperhomala</i>)	9
<i>meridionale</i> , Costa (g. <i>Meconema</i>)	4			<i>virescens</i> , Brunn. (g. <i>Siliquofera</i>)	10
<i>minor</i> , Sulzer (g. <i>Meconema</i>)	4	<i>ranatriniformis</i> , Westw. (g. <i>Phasmo-</i>		<i>iridis</i> , De G. (g. <i>Phasgonura</i>)	16
<i>mirabilis</i> , Bol. (g. <i>Nicephora</i>)	4	<i>dea</i>)	17	<i>viridissima</i> , Linn. (g. <i>Phasgonura</i>)	16
<i>montandoni</i> , Burr (g. <i>Derallimus</i>)	21	<i>restrictus</i> , Fisch. (g. <i>Derallimus</i>)	21	<i>viridissimus</i> , Sulz. (g. <i>Meconema</i>)	4
		Sasima (genus), Bol.	9	<i>woodfordi</i> , Kirby (g. <i>Hyperhomala</i>)	7, 9
		<i>savignyi</i> , Luc. (g. <i>Phasgonura</i>)	16	Xiphidiola (genus), Bol.	2
		<i>scutata</i> , Charp. (g. <i>Cyrtaspis</i>)	5	Zaprochilus (genus), Caudell	17
				Zichy (genus), Bol.	22



FAM. LOCUSTIDÆ

SUBFAM. PHASMODINÆ, MECONEMIINÆ, PHYLLOPHORINÆ



*Derallimus obesus* Fisch.*Derallimus obesus* Fisch.*Derallimus* sp. ♀*Tympanophora pellucida* White.*Onconotus laxmanni* Pallis. ♂*Bradyporus dasypus* Illiger.*Amphiestras bacula* Ramb.*Phasgonota* sp.*Mortoniellus karnyi* Griffitt.*Amphiestras bacula* Ramb.*Hyperhomala woodfordi* Kirby. ♂*Phasgonura viridissima* Linn. ♀*Meconema thalassinum* De Geer.

FAM. LOCUSTIDÆ

SUBFAM. TYMPANOPHORINÆ, BRACHYPORINÆ, PHASGORUNINÆ

EXPLANATION OF PLATES

PLATE 1

Fig. 1. *Tympanophora pellucida*, White.
 — 2. *Phasgonura viridissima*, Linnaeus.
 — 3. *Derallimus obesus*, Fischer.
 — 4. — — —
 — 5. *Onconotus laxmanni*, Pallis.
 — 6. *Amphiestris baetica*, Rambur.
 — 7. *Mortoniellus karnyi*, Griffini.
 — 8. *Derallimus*, sp. (Original, ♀ showing short stout ovipositor).
 — 9. *Phasgonura* sp. (Original, showing tarsus with plantula).
 — 10. *Bradyporus dasypus*, Illiger (Original, ♀ showing long slender ovipositor).
 — 11. *Hyperhomala woodfordi*, Kirby (Original, ♂ showing stridulating organ of the venter.
 Side view).
 a. Posterior coxae, with transverse ridges.
 b. Metasternal lobe, with stridulating teeth on outer inner margin.
 — 12. *Meconema thalassina*, De Geer (Original, ♀ pronotum from side).

PLATE 2

Fig. 1. *Phasmodes ranatiformis*, Westwood.
 — 2. *Zaprochilus australis*, Brulle.
 — 3. *Nicephora subulata*, Bolivar.
 — 4. *Acilacris tridens*, Bolivar.
 — 5. *Meconema meridionale*, Costa.
 — 6. *Nicephora trigonidoides*, Bolivar.
 — 7. *Thaumaspis trigonurus*, Bolivar.
 — 8. *Amytta inconspicua*, Brunner.
 — 9. *Cyrtaspis variolosa*, Costa.
 — 10. *Hyperhomala virescens*, Serville.
 — 11. *Siliquofera grandis*, Blanchard.
 — 12. *Sasima spinosa*, Brunner.





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